

What is Claimed is:

1. A session relay method for relaying a session between a data transmission terminal and a data reception terminal, comprising the steps of:

5 a step of monitoring data amount within a data storing unit;

a step of requiring a receivable amount to take a value smaller than empty data amount of the data storing unit, obtained according to said data amount; and

10 a step of informing the data transmission terminal of said receivable amount.

2. A session relay method for relaying a session between a data transmission terminal and a data reception terminal, comprising the steps of:

5 a step of determining transmissive amount in data transmission processing, according to a judgment result whether transmission amount is reduced or not, when transmission data based on the monitoring result of the data amount within the data storing unit and a network situation, does not exist for a predetermined

10 period.

3. A session relay method for relaying a session between a data transmission terminal and a data

reception terminal, comprising the steps of:

5 a step of monitoring data amount within a data
storing unit;

a step of requiring a receivable amount to
take a value smaller than empty data amount of the data
storing unit, obtained according to said data amount as
a transmissive amount to be informed to the data
10 transmission terminal; and

a step of determining data transfer amount in
data transmission processing, according to a judgment
result whether transmission amount is reduced or not
when transmission data based on the monitoring result of
15 the data amount within the data storing unit and a
network situation does not exist for a predetermined
period.

4. The session relay method as set forth in
Claim 1 or Claim 3, further comprising

a step of setting a plurality of thresholds
for said empty data amount within the data storing unit
5 and determining a receivable amount to take a value
smaller than said empty data amount within the data
storing unit, according to another function within a
range of the respective thresholds.

5. The session relay method as set forth in
Claim 1 or Claim 3, comprising

a step of setting a plurality of thresholds
for said empty data amount within the data storing unit
and fixing a value in proportion to one divided by
positive of said empty data amount within the data
storing unit, a value in proportion to a value
multiplied by positive of said empty data amount within
the data storing unit, a fixed value less than the empty
data amount within the data storing unit, or a value
required in these combination, as a receivable amount,
within the range of the respective thresholds.

6. The session relay method as set forth in
Claim 1 or Claim 3, comprising

a step of setting a plurality of thresholds
for said empty data amount within the data storing unit
and fixing as a receivable amount, a value of a function
which decreases monotonously according as the empty data
amount within the data storing unit decreases, which is
continuous on the whole and gets a value smaller than
said empty data amount within the data storing unit,
using the individual function for each threshold.

7. The session relay method as set forth in
Claim 2 or Claim 3, comprising

a step of judging whether the transmissive
amount is reduced or not, according to information for
specifying a user such as IP address, ID of VLAN, and

MAC address, information for specifying an application
such as port number of TCP, and information for
specifying priority of data such as TOS field in the IP
header, priority in the VLAN header, and priority in the
MPLS header.

8. The session relay method as set forth in
Claim 2 or Claim 3, comprising
a step of judging that the transmissive amount
is initialized when the data storing unit continues
empty of data for a predetermined period.

9. The session relay method as set forth in
Claim 2 or Claim 3, comprising
a step of judging that the transmissive amount
is initialized when the data storing unit continues
empty of data for a predetermined period, said
predetermined period being determined according to the
information for specifying a user such as IP address, ID
of VLAN, and MAC address, the information for specifying
an application such as port number of TCP, and the
information for specifying priority of data such as TOS
field in IP header, priority in VLAN header, and
priority in MPLS header.

10. The session relay method as set forth in
Claim 2 or Claim 3, comprising a step of judging that

the transmissive amount is not initialized.

11. A session relaying apparatus for relaying a session between a data transmission terminal and a data reception terminal, comprising:

5 a unit which receives data transmitted from the data transmission terminal;

a unit which monitors data amount within a data storing unit;

a unit which requires a receivable amount to take a value smaller than said data amount; and

10 a unit which creates an acknowledgement signal based on said receivable amount and transmits the signal to the data transmission terminal.

12. A session relaying apparatus for relaying a session between a data transmission terminal and a data reception terminal, comprising:

5 a unit which receives an acknowledgement signal from the data reception terminal;

a unit which monitors data amount within a data storing unit;

10 an initialization judging unit which judges whether transmission amount is reduced or not when transmission data does not exist for a predetermined period based on a network situation; and

a unit which determines transmissive amount

according to the monitoring result of said data monitor
and the judgment of said initialization judging unit and
15 transmits the data.

13. A session relaying apparatus for relaying
a session between a data transmission terminal and a
data reception terminal, comprising:

a unit which receives data transmitted from
5 the data transmission terminal;

a unit which monitors data amount within a
data storing unit;

a unit which requires a receivable amount to
take a value smaller than said data amount;

10 a unit which informs the data transmission
terminal of said receivable amount;

a unit which creates an acknowledgement signal
based on said informed amount;

15 a unit which receives an acknowledgement
signal from the data reception terminal;

an initialization judging unit which judges
whether transmission amount is reduced or not when
transmission data does not exist for a predetermined
period based on a network situation; and

20 a unit which determines transmissive amount
according to the monitoring result of said data monitor
and the judgment of said initialization judging unit and
transmits the data.

14. The session relaying apparatus as set forth in Claim 11 or Claim 13, in which

a plurality of thresholds is set for said empty data amount within the data storing unit, and a
5 receivable amount is determined to take a value smaller than said empty data amount within the data storing unit, according to another function within a range of the respective thresholds.

15. The session relaying apparatus as set forth in Claim 11 or Claim 13, in which

a plurality of thresholds are set for said empty data amount within the data storing unit, and a
5 value in proportion to one divided by positive of said empty data amount within the data storing unit, a value in proportion to a value multiplied by positive of said empty data amount within the data storing unit, a fixed
10 value less than said empty data amount within the data storing unit, or a value required in these combination, is fixed as a receivable amount within the range of the respective thresholds.

16. The session relaying apparatus as set forth in Claim 11 or Claim 13, in which

a plurality of thresholds are set for said empty data amount within the data storing unit, and a

5 value of a function which decreases monotonously
according as said empty data amount within the data
storing unit decreases, which is continuous on the whole
and gets a value smaller than the empty data amount
within the data storing unit, is fixed as the receivable
10 amount, using the individual function for each threshold.

17. The session relaying apparatus as set
forth in Claim 12 or Claim 13, in which

whether the transmissive amount is reduced or
not, is judged, according to information for specifying
5 a user such as IP address, ID of VLAN, and MAC address,
information for specifying an application such as port
number of TCP, and information for specifying priority
of data such as TOS field in the IP header, priority in
the VLAN header, and priority in the MPLS header.

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18. The session relaying apparatus as set
forth in Claim 12 or Claim 13, in which

said initialization judging unit judges that
the transmissive amount is initialized when the data
5 storing unit continues empty of data for a predetermined
period.

19. The session relaying apparatus as set
forth in Claim 12 or Claim 13, in which

said initialization judging unit judges that

the transmissive amount is initialized when the data
5 storing unit continues empty of data for a predetermined
period, said predetermined period being determined
according to the information for specifying a user such
as IP address, ID of VLAN, and MAC address, the
information for specifying an application such as port
10 number of TCP, and the information for specifying
priority of data such as TOS field in IP header,
priority in VLAN header, and priority in MPLS header.

20. The session relaying apparatus as set
forth in Claim 12 or Claim 13, in which
said initialization judging unit judges that
the transmissive amount is not initialized.

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21. A session relay program for relaying a
session between a data transmission terminal and a data
reception terminal, executed on a computer, comprising
the function of:

5 a function of monitoring data amount within a
data storing unit, requiring a receivable amount to take
a value smaller than empty data amount of the data
storing unit, obtained according to said data amount,
and informing the data transmission terminal of said
10 receivable amount.

22. A session relay program for relaying a

session between a data transmission terminal and a data reception terminal, executed on a computer, comprising the function of:

5 a function of determining transmissive amount
in data transmission processing, according to a judgment
result whether transmission amount is reduced or not,
when transmission data based on the monitoring result of
the data amount within the data storing unit and a
10 network situation, does not exist for a predetermined
period.

23. A session relay program for relaying a session between a data transmission terminal and a data reception terminal, executed on a computer, comprising the function of:

5 a function of monitoring data amount within a
data storing unit, requiring a value smaller than empty
data amount of the data storing unit, obtained according
to said data amount as a receivable amount to be
informed to the data transmission terminal, and
10 determining data transfer amount in data transmission
processing, according to a judgment result whether
transmission amount is reduced or not when transmission
data based on the monitoring result of the data amount
within the data storing unit and a network situation
15 does not exist for a predetermined period.

24. The session relay program as set forth in Claim 21 or Claim 23, comprising

5 a function of setting a plurality of thresholds for said empty data amount within the data storing unit and determining a receivable amount to take a value smaller than said empty data amount within the data storing unit, according to another function within a range of the respective thresholds.

25. The session relay program as set forth in Claim 21 or Claim 23, comprising

5 a function of setting a plurality of thresholds for said empty data amount within the data storing unit and fixing a value in proportion to one divided by positive of said empty data amount within the data storing unit, a value in proportion to a value multiplied by positive of said empty data amount within the data storing unit, a fixed value less than the empty data amount within the data storing unit, or a value
10 required in these combination, as a receivable amount, within the range of the respective thresholds.

26. The session relay program as set forth in Claim 21 or Claim 23, comprising

5 a function of setting a plurality of thresholds for said empty data amount within the data storing unit and fixing as the receivable amount, a

value of a function which decreases monotonously
according as the empty data amount within the data
storing unit decreases, which is continuous on the whole
and gets a value smaller than said empty data amount
10 within the data storing unit, using the individual
function for each threshold.

27. The session relay program as set forth in
Claim 22 or Claim 23, comprising
a function of judging whether the transmissive
amount is reduced or not, according to information for
5 specifying a user such as IP address, ID of VLAN, and
MAC address, information for specifying an application
such as port number of TCP, and information for
specifying priority of data such as TOS field in the IP
header, priority in the VLAN header, and priority in the
10 MPLS header.

28. The session relay program as set forth in
Claim 22 or Claim 23, comprising
a function of judging that the transmissive
amount is initialized when the data storing unit
5 continues empty of data for a predetermined period.

29. The session relay program as set forth in
Claim 22 or Claim 23, comprising
a function of judging that the transmissive

amount is initialized when the data storing unit
5 continues empty of data for a predetermined period, said
predetermined period being determined according to the
information for specifying a user such as IP address, ID
of VLAN, and MAC address, the information for specifying
an application such as port number of TCP, and the
10 information for specifying priority of data such as TOS
field in IP header, priority in VLAN header, and
priority in MPLS header.

30. The session relay program as set forth in
Claim 22 or Claim 23, comprising a function of judging
that the transmissive amount is not initialized.